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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,870	01/10/2002	Achint P. Mathur	P3007.002 Tranter	9825

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EXAMINER
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CIRIC, LJILJANA V

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/044,870

Applicant(s)

MATHUR ET AL.

Examiner

Ljiljana (Lil) V. Ciric

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 May 2004 et al.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7, 8 and 14-28 is/are pending in the application.
- 4a) Of the above claim(s) 7, 14, 15 and 20 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-19 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8 and 14-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

### *Response to Amendment*

1. This Office action is in response to the reply filed on May 27, 2004 and the interviews on September 20 and October 7, 2004.
2. This Office action is also in response to the Status Inquiry filed by applicant on April 11, 2005.
3. Claims 1 through 5, 7, 8, and 14 through 28 remain in the application. Of these, claims 21 through 28 are new and the rest are amended, either directly or indirectly.
4. Claims 7, 14, 15, and 20 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 6, 2003.

### *Response to Arguments*

5. Applicant's arguments with respect to the previously rejected claims have been considered but are moot in view of the new grounds of rejection.

Applicant is nevertheless respectfully reminded that claims in a pending application should be given their broadest reasonable interpretation. *In re Pearson*, 181 USPQ 641 (CCPA 1974).

### *Information Disclosure Statement*

6. The information disclosure statement filed on October 4, 2002 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has NOT been considered.

### *Specification*

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7. The abstract of the disclosure is objected to because: (a) it is too long; and, (b) it fails to avoid phrases which can be implied (i.e., "The present invention relates to"). Correction is required. See MPEP § 608.01(b).

8. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: there is no proper antecedent basis in the specification for the term "resilient member" as now recited at least in claims 1 and 28.

*Claim Rejections - 35 USC § 112*

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 1 through 5, 8, 16, and 28 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1 through 5, 8, 16, and 28 as amended now newly recite "a *resilient* member...compensating for any expansion or contraction of said heat transfer plates along the longitudinal axis of the housing during operation of the heat exchanger." The originally filed disclosure (paragraph [0001] on page 6) more particularly disclose a disk 50 which "serves as a spring device to compensate for any vertical expansion of the cassettes 12 that may occur during the operation of the heat exchanger 10. More specifically, the disk 50 is made of spring steel...In other words, the disk 50 acts as a bellows or spring, and allows the plate pack to expand towards and away from the bottom cover member 18". The originally filed claims are commensurate in scope to the original disclosure, but the amended claims are not because while a disk made of "spring steel" which serves as a bellows or spring may be characterized as being resilient, the

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term "resilient member" as now recited in the claims encompasses far more than what was originally disclosed. More particularly, the term "resilient member", as broadly interpreted as required, encompasses a variety of items such as gaskets and other items made from elastic materials which do not appear to have been contemplated for inclusion in the inventive apparatus by the inventors at the time the application was filed. Thus, the recitation of a "resilient member" is broader than is warranted by the originally filed disclosure and claims and thus constitutes new matter.

*Claim Rejections - 35 USC § 102*

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

12. Claims 1 through 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Rasmussen (previously of record).

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Rasmussen [i.e., Figures 6 and 20] discloses a heat exchanger essentially as claimed, including, for example: a housing including a cylindrical shell 64; a top cover member and a bottom cover member 74 and 84; a plurality of first and a plurality of second heat exchanger plates 140 in a plate stack 62 and with spaces between the first and second plates; a resilient member or gasket 152 located in the housing adjacent one end of the plate stack (i.e., the circumference being one end of the stack at least as broadly interpreted as required), the resilient member supporting the plate stack and compensating for expansion and contraction of the heat transfer plates along the longitudinal axis of the housing to provide sealing between the plates. Rasmussen also discloses inlet and outlet ports 144 and 148, as well as inlet and outlet nozzles 142 and 146.

The reference thus reads on the claims.

13. Claims 21 through 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Kontu.

Kontu discloses a heat exchanger essentially as claimed, including, for example: a housing including a cylindrical shell 20 closed by top and bottom cover members 21; a plurality of interleaved and alternating heat transfer plates 11; a housing inlet 16 and a housing outlet 17; a shell inlet 18 and a corresponding inlet chamber as shown in Figure 7; a shell outlet 19 and a corresponding outlet chamber as shown in Figure 7; seals or welds at circumferences 13 as shown in Figure 7 dividing a circular area around the plates 11 to provide the inlet and outlet chambers; heat transfer plates 11 being formed with inlet and outlet ports 14; and, generally V-shaped corrugations 12 formed in plates 11 at a fixed angle a relative to each other as shown in Figure 6.

The reference thus reads on the claims.

### *Claim Rejections - 35 USC § 103*

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Alternately, claims 1 through 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Yeh et al. (filed August 31, 2000).

Yeh et al. discloses a heat exchanger essentially as claimed, including, for example: a housing including a shell 160, with the top and bottom walls of the shell being very broadly readable on the top and bottom cover members as recited in claim 1 of the instant application; a plurality of heat transfer plates 128 in alternating relationship in a plate stack in a plate stack 130 with spaces or channels 132 and 136 between the plates that provide first and second fluid passages 132 and 136 for fluid flow between the heat transfer plates 128; an inlet port 114 and an outlet port 118 in the body of the heat transfer plates 128; a first inlet nozzle or an exhaust gas inlet as shown in Figure 2, for example; a first outlet nozzle or an exhaust gas outlet as shown in Figure 2; and, a resilient member or folded seal 180 adjacent one end of the plate stack 130 which supports the plate stack 130 and which compensates for expansion or contraction of the heat transfer plates 128.

While Yeh et al. does not specify shape of the shell as being cylindrical in cross-section, it does teach that the internal volume (and hence the shape) of the shell 160 is a matter of design choice [see column 6, lines 7-18]. Thus, it would have been obvious to one skilled in the art at the time of invention to modify the shape of the shell 160 to any shape, including a cylindrical one, in order to optimally meet the application-specific operational requirements.

***Allowable Subject Matter***

16. Claims 17 through 19 are allowed.

17. Claims 4, 5, 8, 16, and 28 *may or may not* be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, first and/or second paragraphs, set forth in this Office action, and to include all of the limitations of the base claim and any intervening claims. While the claims are currently not properly rejectable using any of the prior art currently of record, further consideration *will* be

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necessary to determine whether the claims remain allowable over the prior art once the deficiencies under 35 U.S.C. 112, first and/or second paragraphs are removed.

*Conclusion*

18. The additional prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yoshioka et al. discloses a heat exchanger essentially as claimed in claims 21 through 27 of the instant application. Raunio and Le Gauyer are also particularly relevant at least to claim 21.

Kerkman et al. is of general interest.

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ljiljana (Lil) V. Ciric whose telephone number is 571-272-4909. The examiner can normally be reached on Mondays through Fridays from 10:00 a.m. to 6:30 p.m.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene, can be reached at 571-272-4930.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained



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from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ljiljana (Lil) V. Ciric  
Primary Examiner  
Art Unit 3753